FADCA>BEACON

THE FLORIDA AMATEUR DIGITAL COMMUNICATIONS ASSOCIATION NEWSLETTER

Vol. 2, No. 7 Brandon, Florida July 1985

NEW TNC FOR COMMODORE 64 FROM A. E. A.

A.E.A has announced the PK-64, the first packet system with both hardware and software optimized for the Commodore 64 computer.

On the hardware side the PK-64 includes the Western Digital 1935 HDLC chip for full-duplex operation. The modem is based on the Exar 2206 and 2211 chip set including a 6-pole post detection filter for improved HF and VHF performance. The PK-64 is designed for small size and light weight to be as convenient to use as possible. A.E.A designed the PK-64 to operate from 12 Volts DC for maximum flexibility in powering the unit. An AC adapter is available from A.E.A for those wishing to use a 115 VAC power source. The PK-64 will work with virtually any voice transceiver.

The hardware is only half the story. No packet radio controller is complete without appropriate communications software. Existing terminal emulation programs used with present packet controllers were not designed with packet radio communication in mind and are not optimum. The PK-64 includes its own MBA-TOR(tm) style communications software which has been optimized for packet radio.

The PK-64 software allows split screen operation for more efficient packet radio communications. This is a valuable feature since it allows receiving and displaying packets while the operator is typing a message or response to be transmitted. There is a built-in word processor style text editor that allows disk or cassette files to be created, edited, or deleted. Commodore 64 text and executable files may be transferred error-free with the PK-64. Ten command and message buffers are available for traffic, bulletins, or often used connect paths etc. A software clock is included which automatically logs the connect and disconnect times and dates. PK-64 commands are the same style as the TAPR family of commands.

A.E.A plans to introduce the PK-64 at a price of less than $220, with initial production and delivery beginning in September. With all the features and low price the PK-64 will prove to be a great performer and an exceptional value in packet radio communications.

For more information, contact A.E.A at POB C-2160, Lynwood, WA 98036. (206) 775-7373.

MODIFIED W0RLI BBS BEING TESTED

Jim Scalf, K4TKU
10445 S.W. 70th Ave.
Miami, FL 33156

A heavily modified version of the excellent W0RLI mailbox has been operating on a test basis since mid-May in the Miami area. The software modifications were done by my brother Bob, K4EID, who has been operating the modified mailbox in the Knoxville, Tennessee area for the past few months. The program appears to be working well after correcting a few early "operational" bugs. Early reports from users indicate good operating speed and easy use.

There were several reasons for the modifications to the W0RLI software. The primary reason was that it was written to run only on the Xerox 820 computer and was totally dependent on the Xerox BIOS AND ROMS. In its original form it could not be used on any other computer system. An assembly listing of the original program (Rev. 6.7) was difficult to follow because of the use of approx. 71 special macros. In order to use it on some other computers and add some enhancements, Bob eliminated all of the special macros, streamlined much of the code, reduced the configuration file by about two-thirds, eliminated the use of the IOBYTE for port selection and the dependency on the Xerox 820 BIOS and ROMS and incorporated SIO and TNC set-up code into the initialization section. Optional software XON/XOFF flow control was provided and may create some problems in a few modes such as uploading large files. The result is an operating mailbox (and gateway after a few more mods) on a Digital Research Computers Big Board computer with two 674K double density drives.The real beauty of the re-written software is that it makes it possible to modify and re-assemble the program to run on other Z-80 based computer systems. Two stations in the Miami area are now running the W0RLI software. Bill, NK4K, has just received the latest version (Version 9.5) of the RLI software and is

Continued on page 3.

BYTES FROM THE WRITE ONLY MEMORY

Ted Huf, K4NTA

Digipeater Calls

Last month in the FADCA>BEACON I proposed that wide area digipeaters use their Local Area Network city name as their call letters. As of July 14th N2WX-7 and K4NTA-1 answer to their call letters or MLB for N2WX-7 and STU for K4NTA-1. Howie N2WX was able to modify his digipeater program on the Xerox 820 to accept either the call or the name. FADCA has set a target date of August 15th for all Florida wide area LAN digipeaters to adopt this procedure. It is recongized that TAPR and GLB digipeaters will not be able to use both the call and the city name.

For TAPR, AEA and Heathkit TNCs we suggest that the MYCALL be changed to the LAN city name as shown on the FADCA map in the BEACON and PERMed in. For example WA4ARE-1 becomes WPB and we suggest that the beacon be set to BEACON EVERY 60 with a BTEXT something like "de WA4ARE/R digipeater WPB - West Palm Beach, FL." Sending this ID beacon every 10 minutes will satisfy the FCC requirement for repeater ID. The catch is that if the TNC looses power, the BTEXT is lost and the B E 60 reverts to B E 0. To solve this problem, we are tring to find out how to patch the EPROM so that the default beacon time will be 60 and the BTEXT will be our ID beacon for that particular digipeater. Another solution for this problem is to power the TNC with a battery so that it never looses power. Still another method of IDing is for a local home station to set his UNPROTO to repeat VIA the digipeater and set his BTEXT so that it will ID the digipeater when the beacon is repeated.

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Because:

You want to recreate the thrill of your first ham contact!
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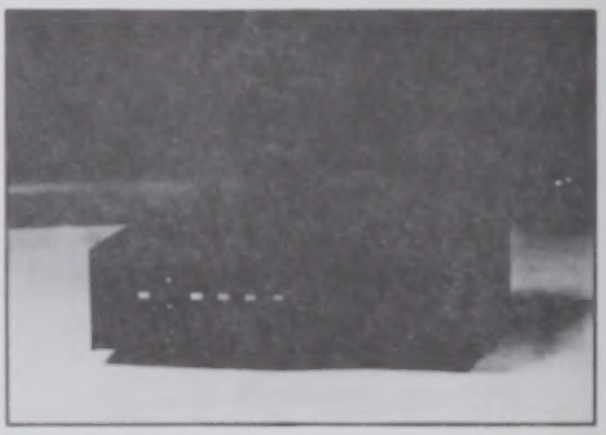
You want to send error-free messages on HF/VHF/Satellite in spite of QRM!
Frequency in use? No problem!! Jump right in and transmit!!
No VHF line-of-sight path to Joe? Again, no problem! Digipeat through other stations to Joe!
Joe's not there? Store a message at his station!
RTTY is too slow? "Packet away" at up to 1200 baud or more.



In Packet Radio, your station is a radio, a computer terminal, and a TNC (Terminal Node Controller, hopefully the AEA PKT-1). You type and the TNC sends short bursts (packets) of two-tone modulation called AFSK. The other station decodes them and displays them on his monitor screen. He then sends to you.

There is a lot of activity—local clubs, voice nets, mailboxes/bulletin boards, links between bands, long range (digi)repeaters and chained digipeaters, voice nets, search/rescue and emergency work, newsletters, satellite communications, technical development of new equipment and software, etc. 220 MHz will be very important to packet radio. Help us populate it and "Save the Band"!! We need your help and participation.

```
AEA Packet Radio
RAM length is 2000
cmd: connect to N7ML via KB7G, K6RFK
cmd: ***CONNECTED TO N7ML
Hi Mike - have you seen the great new AEA
  PKT-1?
YES JOHN - LOOKS GOOD K
Bye Mike sk
cmd: ***DISCONNECTED
cmd:
```

Packet radio is:

Standardized—your station can talk to any other packet station.
Popular—fast growth over the last year to about 2000 stations in the U.S.
Multi-frequency—10.147, 14.103, 145.832, Oscar 10, 145.01 (and other local 2M frequencies) are being used now.
Public Service—traffic handling, search and rescue, public events, emergency service.
Multimode—conventional radio, meteor scatter, but no EME/moonbounce yet (will you be first?).
Simple—you control the PKT-1 by typing 5-6 simple one- to four-letter command words on the terminal or computer. Several of them are shown in the above monitor screen simulation, which shows a connect via digipeaters, and an interchange between two stations.

It's easy to get going. You probably already have the radio, and the computer or terminal. You'll need to operate your computer in RS232C mode using "communications terminal" software that is free or cheap. We can usually furnish information on what to use for popular computers. The rest of the software is resident in the PKT-1 (you will need to buy a PKT-1). And you need a MIC connector to connect to the (furnished) radio cable you'll plug into your radio MIC jack. And "BRAAP," you're on the air with "Packet Racket."

You're likely aware of Packet Radio already. If not, read WB4GXD's three excellent tutorial articles in the Sept. and Oct. '83 and Jan. '84 issues of *73*. Clip the coupon below, and we'll send articles, a reading bibliography, product literature on our PKT-1 Packet Controller, answers to commonly asked questions about packet radio, lists of packet clubs in your area, sample packet newsletters from the ARRL and clubs, AEA dealer locations, packet videotape and audio cassette loan info, voice net info on HF/VHF where you can listen and ask questions, a blow-by-blow description of how easy it is to get started, a free AEA Packet Lapel Button, AND WE'LL PUT YOU ON OUR PACKET MAIL LIST to ensure you'll get further mailings!!!

See your favorite AEA dealer, clip and send the coupon, or call John Gates, N7BTI (the AEA Packetman) at (206) 775-7373.

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OK AEA, send packet information to:

Name _____ Date _____
Street _____
City, State _____
Zip _____ Call me at _____

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(206) 775-7373 • TELEX: 152571 AEA INTL

W0RLI MAILBOX / GATEWAY - version 9.5

- - - Commands that control the system:

B - Bye, log out of the MailBox.
Forced if no response to a menu in 4 minutes.

G - Activate the GateWay.

H - Display the help text.

I - Display information about the system.

J - Display the calls of stations recently heard or connected.

T - Talk to Hank. Dings the bell on the local terminal.
Gives up after one minute, or input from the TNC.

X - Toggle between the short and long form of the menu.

- - - Commands that apply to messages:

K - Kill a Message.
Qualifier:
T - Used to kill traffic after it is taken.
Argument - Message number.

L - List message headers.
Qualifier:
None - List all messages entered since you last logged in.
B - List bulletins only.
L - List the last N messages.
M - List messages addressed to you only.
T - List NTS traffic only.
> - List messages TO call given as argument.
< - List messages FROM call given as argument.
Argument - Number of the oldest message to list.
For LL, the number of messages to list.
For L< and L>, the call.

R - Read a message.
Argument - Message number to read.

S - Send a message.
Qualifier:
None - A general message.
B - A bulletin.
P - A private message.
T - traffic for the NTS.
Argument - Call of addressee.

The form: "S call1 @ call2" is also supported.
call1 is the addressee, call2 is the bbs to forward
the message to. Example: SP K1KSY @ W0RLI

- - - Commands that apply to file transfers:

The MailBox expects standard CP/M filenames:
8 character maximum name, 3 character maximum extension.
Examples: DOC.TNC HFCALLS.HRD CALLS.HRD

D - Download a file FROM the MailBox.
Argument - Name of file to transmit.

U - Upload a file TO the MailBox.
Argument - Name the file will have.
Terminate the file with ^Z (CTL-Z).

W - What files are available.
Argument - If present, filespec to list.

- - - Commands on the GateWay menu:

C - Attempt a connection.
Argument: Call of station to connect to, may include digipeater
routing, for example: C N1CB via KD2S-1,WA1TLN-1

J - Display the calls of stations recently heard or connected.

U - Call CQ. Whatever you transmit will be transmitted through
the other TNC in UNPROTOCOL mode.

R - Return to the MailBox (Discontinue GateWay operation).

News From South Carolina
Rip, W4FX

(Reprinted from the GRAPEVINE, July 1985.)

The South Carolina Packet Enthusiast Society was formed on July 10, 1985 and will be known as SCRAPES from here on out. An organizational meeting will be held in Columbia, SC on Aug 10 at 10 AM at a place yet to be announced.

The following stations are known to be on packet in South Carolina: WA4SZK (and 5 others) in Florence, N4EOY in Lexington, KJ4X in Pickens, KA4YEA in Anderson, WB4OQL in Greer, and W4FX in Anderson. Western SC stations can be reached via W4FX-0, and later on by W4FX-1 on Sassafras Mountain. N4EOY and Florence stations can be reached via W4ULH-1.

****

Effective Monday June 17th TAPR has a new Office Manager. The voice you will hear when calling the office will be that of "Chris" Kurz.

Chris has spent the last week training with Lyle Johnson's wife Heather. Both these gals have been working very hard to get things in order so that future TAPR business (like TNC 2) can be handled quickly, AND correctly.

If you have any outstanding, or new business with TAPR give us a call. Chris will do her best to help you.

****

MODIFIED W0RLI Continued

currently testing it with his Xerox 820. The W0RLI software revision 9.5 offers several new features. Although plans are tentative, K4EID is working on a modified version of this latest release for use on other computer systems. For those not familiar with the W0RLI Mailbox and Gateway, a listing of the commands appears in this issue of the BEACON.

There is no special log-in procedure. Each station is automatically logged in when connected and all unread messages are listed for the user. The beacon, when enabled, lists stations having unread mail. There is one important characteristic to keep in mind -- if there is no keyboard input from the connected station in four (4) minutes, the mailbox will automatically terminate the connection and log the user off. More importantly, if a user just "goes away" or loses the connection (reboots, turns his radio off, exceeds retry count, etc.) the mailbox will not respond to another user until the four minute timer has expired and logins are again permitted.

In summary, we are off to a good start and hope to continue to make progress. Miami stations who access the K4TKU board are encouraged to leave comments and suggestions so that any bugs can be identified and corrected.

NEWS AND VIEWS

Gwyn Reedy, W1BEL

I want to tell you about my short vacation over the July Fourth holiday. I set up a packet mobile station consisting of the TAPR TNC2, Radio Shack Model 100, Icom IC-02AT, TE Systems 160 watt amp-GaAsFET preamp, and a 5/8 wave roof mounted antenna. Everything was powered by the automobile battery except for the Model 100 which used a 6v gel cell. (Future mobile activities will be assisted by a Model 100 power cord including a voltage regulator.)

There were two very enjoyable aspects to the week long mobile operation. One was the entertainment value of the packet setup while driving long distances. The Model 100 fits comfortably on the console between the front seats in my vehicle and the display can be read easily in a short glance. One handed typing can be a problem for the driver, but roadside stops can be made if a contact results or the co-pilot/navigator/passenger can be pressed into service. Overall the setup improved my alertness by avoiding boredom on the long driving days.

The second source of fun was the nice packet people I met as I drove through their area. There is considerable packet activity in the Carolinas and Virginia, and the no-mans-land that appears on Eastnet and SOUTHNET maps does not exist. There is just lack of information on the details of the activity in the hands of the mapmakers. We hope to cure that for the next edition of the SOUTHNET map and callsign directory.

Some operator comments based on my mobile and previous portable experience: In this time of manual linking that uses operator supplied digipeater routings, a person without a map or listing of the existing digipeaters and their geographic relationship is unable to make use of the network. I was fortunate to have SOUTHNET and Eastnet maps that gave me an idea of the location and callsigns of digipeaters. Since my travel was during daylight hours most of the time, and most packet activity occurs during the evening, I could not depend on casual monitoring to determine stations within my range at any time. Beacons from the digipeaters served to help define my area of coverage as I moved along. I was very desirous of a network command that would let me request stations within range of my signal to identify; like a broadcast WRU. My mobile beacons were intercepted by a number of human operators and nice contacts resulted. My beacons were digipeated through the closest KNOWN digipeater and their retransmission monitored, but there must have been many stations within range as I passed by that I never knew of and had no way to discover. Mobile packet is a unique mode of operating at this time, but has been tried by an increasing number of folks since 1983. Portable operation will be even more commonplace than mobile. Network designers should provide full support for these forms of operation.

Some of you may be aware that I have assumed duties as editor of the TAPR newsletter, now named PSR Quarterly. I accepted that job only after assuring myself that I could do it without decreasing the quality of the BEACON. With the first edition of the PSR completed, I find I must recommend that BEACON readers take a look at the PSR Quarterly and have recommended that PSR readers investigate the BEACON. There is so much good techincal and operational news available for print that even two publications cannot provide complete coverage. For those of you that receive both publications, there will be some overlap, but not an excessive amount. Your comments are welcomed.

My vacation included enjoyable two days at the Atlanta Hamfest. The GRAPES put on several seminars and operated a booth in the commercial area. They did an excellent job in all respects and the amount of attention shown by the hamfest attendees was impressive. Very few people stop by anymore and ask "what is packet". They do ask how it works and what equipment is best, but they are already aware of the mode's existence. Occasionally a person known for technical expertise will stop by for more information, so they can catch up with this new development. I hope all the 'slick' magazine writers will do their homework before they publish.

Included this month is a listing of the TNC2 commands as they are expected to appear in the first set delivered. Still no word on when the 'call-in' day for the TNC2 will be, but watch your local Mailbox for the announcement. There is planned to be enough time allowed for the word about 'call-in' day to get around.

DIGITAL EVENTS

AUG 3/4. Jacksonville Hamfest. Packet demonstration and FADCA dinner. Contact W4PCM.
AUG 24. Broward "PACnic", CB Smith Park, 11 AM.
SEP 7/8. Melbourne Hamfest. Contact N2WX.
OCT 12/13. South Florida ARRL Suncoast Convention in St. Petersburg. Two full days of packet activities. Contact KB4LLO.
OCT 12/13. Vero Beach Ham/Computerfest.
Late OCT/early NOV. Second SOUTHNET Packetfest, Atlanta area. Sponsored by GRAPES. Contact WB2CPV.
NOV 30/DEC 1. Broward Hamfest. Contact K4GFG.
FEB 8/9, 86. Tropical Hamboree (Miami Hamfest) at Dade County Youth Fair Grounds in Tamiami Park. Contact WD4JKM.
MAR 86 Orlando Hamcation.

BROWARD 'PACNIC'

Tom Kneisel, K4GFG

A 'PAC'nic for south Florida packeteers will be held on August 24 beginning at 11 AM at CB Smith Park in western Broward County. All packeteers in South Florida are welcome, so come to meet your packet friends and enjoy the afternoon. Bring your own food; grills and charcoal will be provided. Park admission is $1. There are plenty of activities for the kids at CB Smith Park, which is located on Flamingo Road just north of Hollywood Boulevard. If you are coming from out of the area, exit the turnpike at Hollywood Boulevard and go 12 miles west. Talk in will be on the 145.27 repeater. Sponsored by the Broward Chapter of FADCA and the Racal Milgo Amateur Radio Club. Contact WB4EHG or K4GFG.

NAPLES DIGIPEATER

Tom Kneisel K4GFG

A digipeater has been installed in Naples under the callsign WA1JOU-2. The equipment is a TAPR TNC, IC-22, 60 watt RF amplifier, and 11 element Cushcraft yagi at 115 feet. The yagi is pointed East towards Ft. Lauderdale. Here at K4GFG the reception is 95% or better from late evening through late morning. Afternoon and early evening atmospheric conditions in the Everglades cause a drop in signal, but at other times the link to K4GFG is relatively solid. Stations from Stuart to Miami have heard or worked the digipeater, and WA4WHD-1 in Hollywood reaches Naples fairly well (although it can't hear WA1JOU-2 due to receiver problems). Further improvements in receive sensitivity and power ouput for the Naples digipeater are planned. WA1JOU and the Racal Milgo ARC provided the equipment for this digipeater, and W2CXX the site (via NK4K's efforts). This proves that SOUTHNET can be extended into an area where there is no local packet activity by the efforts of dedicated packeteers. Now that we have come half-way to St. Pete with our packet railway, we challenge those on the West coast to install a digipeater in the Ft. Myers area so that the Golden Packet may be driven in the southern route from Miami to Tampa.

CTM
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—J. Trenbeck
"...always stop to read CTM, even though most other magazines I receive (and write for) only get cursory examination."
—Fred Blechman, K6UGT
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Code: Morse (CW includes Kana), Baudot (RTTY), ASCII (RTTY), JIS (RTTY), ARQ/FEC (AMTOR).
Characters: Alphabet, Figures, Symbols, Special Characters, Kana.
Built-in Monitor: 5" high resolution, delayed persistence green monitor — provides sharp clear image with no jiggle or jitter even under fluorescent lighting. Also has a provision for composite video signal output.
Time Clock: Displays Month, Date, Hour and Minute on the screen.
Time/Transmission/Receiving Feature: The built-in timer enables completely automatic TX/RX without operator's attendance.
Selcal (Selective Calling) System: With this feature, the unit only receives messages following a preset code. Built-in Demodulator for High Performance: Newly designed high speed RTTY demodulator has receiving capability of as fast as 300 Baud. Three-step shifts select either 170Hz, 425Hz or 850Hz shift with manual fine tune control of space channel for odd shifts. HIGH (Mark Frequency 2125Hz)/LOW (Mark Frequency 1275Hz) tone pair select. Mark only or Space only copy capability for selective fading. ARQ/FEC features incorpora...
Crystal Controlled AFSK Modulator: A transceiver withou... function can transmit in RTTY mode by utilizing the high st... crystal-controlled modulator controlled by the computer.
Photocoupler CW, FSK Keyer built-in: Very high vo... current photocoupler keyer is provided for CW, FSK ...
Convenient ASCII Key Arrangement: The keybo... arrangement with function keys. Automatic inser... makes operation a breeze.
Battery Back-up Memory: Data in the batte... covering 72 characters x 7 channels and 24 ... retained even when the external power so... be recalled from a keyboard instructio... can be read out continuously. You car... while receiving.
Large Capacity Display Memo... Screen Format contains 40 cha...
Screen Display Type-Ahea...
Buffer Memory: A 160-c... buffer memory is displa... the lower part of the sc... The characters move... erasing one by one... they are transmi... can be written... state for tra... back-up m...
Functi... funct... spe...
P... m-... ...ion of ...
W... Receiving: ... Mors... ...d can be set from ...

the keyboard at any rate betwe... AUTOTRACK on receive. F... Codes, rate is variable by ... when using RTTY Mode... level. The variable spe... business and comm...
Pre-load Functio... from the keybo... messages can ... **"RUB-OU"** messages ... the info...
Auto... eve... V...

...and ...TTL ...ar.

...ages written ...The stored ...while writing ...also be erased while ...

...F automatically sent ...

...an be transmitted by word ...e buffer memory with key- ...

...ers can be transmitted by line ...cy.

...eration: In receive mode, WORD- ...ne last word of the line from splitting in ...asily read.

...ith a keyboard instruction, received data can ...ne same time. This function enables a cassette ...sed as a back-up memory, and a system can be ...tex which uses paper tape.

...d Function: Full cursor control (up/down, left/right) is ...n the keyboard. Test Message Function: "RY" and ... messages can be repeated with this function.

...AND-BREAK (SPACE-AND-BREAK) System: Either ... space tone can be used to copy RTTY.

...able CW weights: For CW transmission, weights (ratio of dot to ...sh) can be changed within the limits of 1:3-1:7.

Audio Monitor Circuit: A built-in audio monitor circuit with an automatic transmit/receive switch enables checking of the transmitting and receiving state. In receive mode, it is possible to check the output of the mark filter, the space filter and AGC amplifier prior to the filters.

CW Practice Function: The unit reads data from the hand key and displays the characters on the screen. CW keying output circuit works according to the key operation.
CW Random Generator: Output of CW random signal can be used as CW reading practice. **Bargraph LED Meter for Tuning:** Tuning of CW and RTTY is very easy with the bargraph LED meter. In addition, provision has been made for attachment of an oscilloscope to aid tuning.
Built-in AC/DC: Power supply is switchable as required; 100-120 VAC; 220-240 VAC/ 50/60Hz + 13:8VDC.
Color: Light grey with dark grey trim — matches most current transceivers. **Dimensions:** 363(W) x 121(H) x 351(D) mm: **Terminal Unit.**
Warranty: One Year Limited

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THE JUNKBOX

FADCA has over sixty 8530-A SCC chips. These ICs are used on the FADboard with the Xerox 820 to give a dual HDLC output. These high speed 6 MHz parts are hard to find, and nowhere else will you get them for $20.00 postpaid. Order from FADCA at the address on the back cover.

FADCA has another shipment of Beehive B-152 terminals. These terminals are guaranteed to work when you get them (but keeping them working is your problem, HI). RS-232 port and auxiliary port, 80 x 24 display, many function keys, etc. Terminals receive upper and lower case, but may only transmit upper case unless modified. Documentation is available. $75.00. Write FADCA at published address.

FADCA has several surplus FAA VHF transmitters that may be suitable for digipeater amplifiers. They are rated at 50 watts output, but use tubes (two 4X150s) capable of much higher power in packet service. They are HEAVY. Contact Jim Eberwine, W4APV. 8118-37th Avenue North, St. Petersburg, FL 33710 (H) (813) 347-0942, (W) (813) 539-3543.

FADCA has a modem kit which provides a good quality, inexpensive way to get on HF packet, or to provide a modem for your FAD board or state machine on the Xerox 820. It was fully described in the March BEACON. The price is $8.95 postpaid. Each order will include a finished (drilled & plated) PC board, parts placement diagram, parts list for both the 300 baud and 1200 baud versions, schematic, and a tune up procedure. If you are interested, send $8.95 per board in check or money order to the designer and producer:

Jerry Quimby (N4AJH)
601 Verbenia Drive
Satellite Beach, FL 32937

FADCA VOICE NETS

REGIONAL (FLORIDA AND ADJOINING STATES): 3958 KHz Sunday 8 AM. NCS: K4NTA

BRANDON (TAMPA BAY AREA): 147.165 (+600) Sunday 8:30 PM EDT. NCS: KF4EF

BREVARD COUNTY AREA: 147.060 (+600) Sunday 8 PM. NCS: N2WX

BROWARD COUNTY AREA: 145.270 (-600) Sunday 8 PM. NCS: K4GFG

CRESTVIEW (Panhandle): 147.360 (+600) Sunday 8:30 PM (after traffic net). NCS: K3NN

FT MEYERS: 50.150 USB Tuesday 7:30 PM. NCS KB4CIA.

GAINESVILLE: 146.91 (-600) Monday 8PM.

STUART:147.060 (-600) Sunday 8 PM.

WEST PALM BEACH CO: 147.285 (+600) Monday 8 PM.

Florida Statewide Frequencies

LAN and calling freq: 145.010
Local QSOs & file xfers:
145.030 /050 /070 /090
220 LANs (20 KHz bandwidth):
221.720, 221.780
Narrow bandwidth linking:
221.400 (20 KHz b/w)
Medium bandwidth linking :
220.570 (100 KHz b/w)

TNC 2 AND FADpad COMMANDS, rel. 0.0.20

NOTE - when "Same as kit" appears, the operation is the same for TNC 2/FADpad as for the TAPR TNC 1

COMMAND	ARG	DEFAULT	VALID RANGE/DESCRIPTION
8bitconv	Y|N	N	When YES, permits the 8th bit in CONVERSE mode to pass between the user and the TNC.
AUtolf	Y|N	N	Same as kit.
Ax2512v2	Y|N	N	When off, valid C bits are forced to 0 and all connections are pre version 2.0 AX.25 lev 2. When on, connections with other v2 compatible TNCs are attempted and allowed, but the TNC reverts to pre version 2 if QSO is with an older TNC.
AWlen	7|8	7	Same as kit. Applies only after cold start/ reset.
AXDelay	n	0	0<=n<=180 x 10ms.
AXHang	n	0	0<=n<=20 x 100ms.
Beacon	E|A n	E 0	0<=n<=250 x 10sec.
BKondel	Y/N	Y	Same as kit.
BText	ss	""	1<=strlen(ss)<=120.
BUdlist	Y|N	N	When Yes, the LCALLS listed are termed buddies and any frames originated by stations other than those in the list are IGNORED in monitor mode. When No, the LCALLS listed are ignored in monitor mode (the reverse of above).
CANline	0-7FH	^x(18h)	Same as kit.
CANpac	0-7FH	^Y(19h)	Same as kit.
COMmand	0-7FH	^c(03h)	Same as kit.
Connect	call/via	N/A	Same as kit, but no trailing TRANS or CONV allowed.
CHeck	0-250x10S	300sec	T3 or WormTIME, if v=2 or v<2 connection respectively.
CMdtime	0-250x1S	10sec	Same as kit.
CMSg	Y/N	N	When on, the specified by the CText command is packetized and sent upon establishment of a connection.
CPactime	Y/N	N	Same as kit.
CR	Y/N	Y	Same as kit.
CText	string	blank	Message sent to people connecting (e.g. I'm in jail, call next week) depending on the setting of CMSG.
CALibr			Enter calibrate mode. Valid commands in calibrate mode are: K-toggle PTT, Q-quit CAL mode, D-dotting, space bar - key toggles hi/ low state on the NRZ>NRZI encoder.
CALSet	0-65535	(UNKNWN)	Count setting for comparison while in CAL routine. CALSET = (1+(525000/Fd))
CONOk	Y/N	Y	Same as kit.
CONMode	T/C	C	Same as kit.
CONStamp	Y/N	N	When on, the daytime stamp is printed with all *** CONNECT messages.
CONVerse			Same as kit.
DAytime	yymmddhhmm		If parameter is present, the software clock/ calender is started for MHeard logging and CONS/Mstamp functions. If it is not present, the daytime is displayed in a form depending on the setting of the DAYUSA flag (see below).
DAYUsa	Y/N	Y	When on, the daytime stamp is displayed in the form common in the U.S. When off, the daytime stamp is displayed in the European form (eg: cmd:DAYUSA OFF DAYUSA was ON cmd:DAYTIME 23-02-85 11:05:30 cmd:DAYUSA ON DAYUSA was ON cmd:DA 02/23/85 11:05:30)
DELete	Y/N	N	Same as kit.
DIGipeat	Y/N	Y	Same as kit.
Disconne			Same as kit.
DISPlay	[A|C|I|L|M|T|]		Same as kit EXCEPT Async replaces the Terminal class, Timing mimics TIming class. NOTE: BUdlist and LCAlls settings are NOT displayed.
DWait	0-31x10mS	160ms	Same as kit, except DWait is ignored when there are outgoing digipeat frames pending.
Echo	Y/N	Y	Same as kit.
EScape	Y|N	N	Same as kit.
Flow	Y/N	Y	Same as kit.
FRack	1-15x1S	3	Same as kit.
FUlldup	Y/N	N	Same as kit.
HCustom	Y|N	N	When ON,LCALLS-BUDLIST used for all functions. When OFF, only filters for monitor function. NOTE: not in beta/dist versions.

Continued on next page.

TNC 2 and FADpad commands, release 0.0.20 Continued

HEaderln	Y|N	N	When ON, a newline is placed between the of a monitored header and the information.
Hid	Y|N	N	When ON, enables the HDLC id frame which is formed at the correct times if the TNC is being used as a digipeater. When OFF, prevents ANY HDLC ID INCLUDING a forced ID cmd.
ID	n/a		The ID command may be issued to force a final identification, used for example when taking a digipeater off the air.
LCAlls	c[,c,...]	blank	c must be a valid call/SSID pair and there may be up to 8 addresses.
LCok	Y|N	Y	Same as kit.
LFadd	Y/N	N	Same as kit.
MAll	Y/N	Y	Same as kit.
Monitor	Y/N	Y	Same as kit.
MCon	Y/N	Y	Same as kit.
MCOM	Y/N	Y	Enables monitoring of <C>onnect, <D>isc, <UA> and <DM> frames.
MHeard			Displays heard log.
MHClear			Clears the heard log.
MFilter	n[,n..]	<empty>	Chars filtered from monitored output 0<=n<=7FH.
MRpt	Y/N	Y	When enabled, displays the path selected and traversed (eg. WB9FLW>AD7I,K9NG*,N2WX-7*, WA7GXD,NK6K,WB6YMH:HI PAUL vs. WB9FLW>AD7I: HI PAUL).
MStamp	Y/N	N	When on, monitored frames are "stamped" with the current daytime (if set).
MYcall	callsign	NOCALL-0	Same as kit.
MAXframe	1-7	4	Same as kit .
NUcr	Y/N	N	Same as kit.
NULf	Y/N	N	Same as kit.
NULLs	0-30	0	True NULLS are sent out. Timing is not performed. Otherwise, same as kit.
Paclen	n	128	0<=n<=255. n==0 interperted as 256. Otherwise, same as kit.
PACTime	E|A n	After 0	0<=n<=250 * 100ms, otherwise same as kit.
PARity	n	Even	0<=n<=3. n parity: x 0 no parity; 0 1 odd parity; 1 1 even parity
PASs	0-7fh	^v(16h)	Same -- NOTE diff default than kit.
PASSAll	Y/N	N	When ON, the reciever does not check for correct CRC on rcvd frames. (NOTE: MHeard logging is disabled when PASSAll is ON)
REDispla	0-7fh	^r(12h)	Same as kit.
REtry	0-15	10	Same as kit.
RESET			Resets TNC and loads default settings. Power down to reset using BBRAMed settings.
RESptime	0-250x100Ms	1.2sec	This is the setting used for T2. (NOTE- T2 is used in both AX25L2V2 and !V2 connections).
Screenl	0-255	0	Same as kit.
SEndpac	0-7FH	0DH	Same as kit.
STArt	0-7FH	11H	Same as kit.
STOp	"	13H	Same as kit.
Trans			Same as kit.
TRACe	Y/N	N	Dump of received frames only. (NOTE: min abbr changed from <0.0.7)
TRFlow	Y/N	N	When ON, software flow (using START and STOP) is used for transparent connections.
TXdelay	n	30	0<=n<=64 x 10ms.
TXFlow	Y/N	N	Same as kit.
Unproto	string	blank	Same as kit.
Xflow	Y/N	Y	Same as kit.
XMitok	Y/N	Y	Same as kit.
XOff	0-7FH	13H	Same as kit.
XON	"	11H	Same as kit .

CURT PARRISH, K4TL
Electronic Kit Assembly & Repairs
306 W. Amherst Avenue
Melbourne, Florida 32901
(305) 723-8659

Greetings, XEROX users

I have obtained a copy of the XEROX 820 service manual, and will provide photocopies of the 100+ page manual for $3.50 ppd.

.

73 Dave N7BHC

Dave Pederson
4382 Cherryview Dr.
West Valley City, UT 84120

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NETWORKING

Jack Brindle, WA4FIB

This month we begin our discussion of the individual OSI (Open Systems Interconnection model) layers. Remember that each layer of the model performs a specific task, communicating data and status to the layers immediately adjoining it. The lowest layer is the physical layer. The task of transferring data from one station to another is accomplished here. In wire-line systems this is done through the use of cable and line drivers/receivers. The RS-232 standard was developed to allow interfacing of equipment at this level. This standard specifies the voltage and impedance levels necessary to effectively transfer data between two devices adhering to the specification. This is not the only specification that is in use for wire-line transfer. A look at the specifications made by the various industry standards groups reveals a multitude of standards, such as RS-422/423, RS-339, V.25 and many others. Each standard is designed to accomplish a specific task to communicate between data devices.

The desire to communicate data over the telephone system brought about another standards problem, this time settled in the US by AT&T and in Europe by the CCITT (Consultative Committee for International Telephone & Telegraph). AT&T issued specifications for synchronous and asynchronous modems at various data rates. The best known is the Bell 103 standard that allows full duplex asynchronous communications over a standard telephone connection at 300 bauds. This standard sets forth the audio frequencies that represent a "one" and "zero" for devices on each end of the connection. Computer users are not content to communicate at 300 bauds, so modems using other Bell standards are commonly used for communications at rates from 110 bauds up to 1.54 megabauds and beyond. Of course, the higher rates require special lines to accommodate the stringent noise and bandwidth requirements of these transfer rates. The higher speed modems use synchronous communications methods that allow the modems to synchronize to the bit stream. Because of their bandwidth requirements they usually transfer only one direction at a time, with each end turning control over to the other end when they have completed a transmission.

The lowest speed commonly used synchronous modem is the 1200 baud Bell 202. This modem, once state-of-the-art, has now been replaced in most commercial installations with higher speed devices. It was the availability of surplus Bell 202 modems that spurred the early packet pioneers. These amateurs saw an opportunity in these "cheap" devices to allow their computers to communicate through the radio. As a result, the use of Bell 202 modulation tones has become a "defacto" standard in amateur packet radio systems.

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Several other standards have evolved over the past few years in packet radio. Along with the Bell 202 tones, the use of a frequency modulated (FM) radio operating in the two meter band, usually on 145.010 has been widely adopted. Other standards include 200 Hz shift on HF using the Bell 103 Originate frequencies (or 170 Hz RTTY tones) and FSK modulation. Another approach was used in the original Ft. Lauderdale (FLAPR) system, differential phase shift keying (DPSK) on a 444 MHz FM radio. This modulation scheme is also in experimental use on the OSCAR 10 satellite.

Each modulation scheme has its own advantages and disadvantages. For example, DPSK provides excellent transfer characteristics, but requires the modification of the radio to directly modulate the transmitter and pull the received signal straight from the radio's discriminator. Early packeteers wanted to use unmodified two meter radios to allow those less technically minded to use the new communications media with little fuss. They placed the requirement that packet audio had to come straight from the receiver's headphone or speaker connector and data was to be injected into the microphome jack. This required the use of audio tones to accomplish the modulation. The now-surplus Bell 202 modems thus became a "natural" to perform the task of translating the bit voltage levels into audio tones for the transfer.

A new standard is now emerging in packet radio for high speed data transfer. This standard centers on the K9NG 9600 baud modem design. These modems use a pseudo-random bit sequence to "scramble" data bits so that they provide a non-constant level to the transmitter. The bit sequence is decoded at the receiving modem so that the data can be usscrambled and placed back in its proper order. These modems will be used with 220 MHz transceivers to provide a high speed data network. Upgrades to that modem and/or future designs will allow even faster data transfer. Of course these modems do not work with ordinary unmodified radios.

The various modulation schemes all have one common purpose for their existence. That purpose is to transfer data from one data device to another. The physical layer is concerned with this transfer, but it does not have the ability to accomplish error free transfers. Simply stated, the physical layer attempts to transfer data from one device to another. The equipment used to transfer the data is not concerned with whether the data is transferred properly, it simply just sends the data and decodes what it hears. The layers above must determine whether the physical layer has given them data that is useful. To illustrate this fact, think of the physical layer as a leaky pipe carrying water, but also spilling some. The upper layers are used to patch the pipe so that the water is delivered to its destination.

Continued >>>

FADCA SQUELCH TALES

Keith O'Brien, N4ZQ

Last month we left off with the review of the Kantronics Communicator. Due to the Beacon deadline, some very interesting infomation about the KPC came to light too late to make the issue. First, Kantronics has recalled all early versions of the TNC for a hardware and software modification. The hardware rework stems from a TNC generated "Birdie" that falls on or about 145.01 MHz. Bad news, as that frequency seems to be becoming the national packet frequency. Don, KB4LLO, one of the reviewers, complained that the signal was very severe, and could not be squelched out. The KPC in test at my location produced no noticable interference at all! Could be that lead dress and TNC location had a lot to do with it. In any case, the complaints were enough for a recall to be issued. Nice to know that the complaints did not fall on deaf ears.

Say you just took delievry of a KPC and wonder if you got the latest issue? Kantronics reports that if the serial number is 49102 or higher, it has been reworked. If you ordered when the KPC was first introduced, and did not send in the registration card or receive the callback letter, I recommend you contact them to arrange for the rework. Word has it that not only do you get the hardware upgrade, but the software is updated too. The review units ran the orginal 1.0 software, but a 1.4 version is out. The new version includes the commands FULLDUP for compatibility with some TNC terminal software (but full duplex operation is not supported), MODEMNA for use of the 1200 baud dumb modem capability, PFINH to inhibit the Poll/Final bit usage, and FILTER to remove control characters from monitored packets.

At the Atlanta Hamfest we had the chance to speak with Travis Brann from Kantronics, and see the new KPC in operation. One of the most visible mods to the TNC was the inclusion of a toroidal core to the wall transformer power lead. Internally a number of ferrite beads have been installed on the I/O leads.

One of the biggest pieces of news to come forth from the Georgia fest was the price reduction of the KPC. Introduced only a few months ago at $389.95, the suggested retail price is now $219.00. Good news if you have been thinking of ordering one, bad news if you were one of the early buyers. Kantronoics claims that the price change was brought about by "competitive factors". I guess that means TAPR's TNC-2 $185.00 announcement at Dayton. The decision was made to lower the price the Monday before the Atlanta Hamfest, and all their dealers were notified the next day. The word really spread like wildfire at the show. All dealers we checked with had sold out by midday Saturday. Saw many a person carrying the KPC box around the show, and the going rate was $185.00. Look for a new bunch of packet people to be getting on soon. But where does that leave the folks that bought in good faith at the original price? Good question! Don't quote me on this, but I was assured that you would be looked after. This could be a free software upgrade to TNC-2 level, when it becomes available. All I will say for now is to hang on to your original sales slip.

AEA was also at the hamfest, and they had news on what they are working on for the packet world. It is a plug-in TNC board for the Commodore C64. It will probably come complete with a built in terminal program and run just above the $200.00 level. Look for more information elsewhere in this BEACON.

Continued on next page.

The first layer above the physical layer provides the error detection and correction service on a node to node basis. This layer, the data link layer, provides station addressing, error detection, and digipeating facilities in the amateur packet radio enviroment. Discussion of that layer will be the topic of next month's column.

Write Only Memory Continued

For the GLB digipeaters, it is a simple matter to reprogram the EPROM to a new call. I understand that the lastest version of the software permits the remote programming of the Beacon Text.

Again the target date is August 15th for change over to city name. These names should follow the SOUTHNET maps and be three letters. FADCA had been given the coordination responsibility for digipeaters by the Florida Repeater Council. If there is any questions about which digipeater in a particular LAN will have use of a city name, please contact me. The rule of thumb is that it should be an dedicated digipeater that provides complete coverage to the LAN plus has connectivity to the adjacent LANs.

WORLI MailBox

At the present time, WA3QFN - Clearwater, N2WX-1 - Palm Bay, K4NTA - Stuart, NK4K - Miami and K4TKU - Miami are running WORLI MailBoxes in Florida. Elsewhere in this issue you will find the commands so I will not go into them here. Hank, WORLI, really has done a great job on this software. It has automatic fowarding of messages from one MailBox to another. For example if KI4T in Miami left a message for W1BEL in Brandon on the NK4K Miami MailBox, the fowarding would go like this: The NK4K Mailbox would check and deturmine that anything going to W1BEL should be fowarded to K4NTA in Stuart and send it to K4NTA. K4NTA MailBox would send it on to N2WX-1 and N2WX-1 sends it on to WA3QFN which is W1BEL's home MailBox. The system operators of each MailBox must maintain a foward file with instructions on how to foward for everyone.

Almost any BBS can emulate the WORLI MailBox fowarding. If you want the details of how to do it, let me know in a message on one of the MailBoxes.

Continued from previous page.

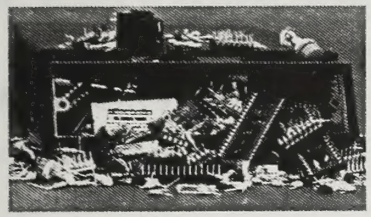
Just a few notes on the Atlanta show in general. The World Congress Center, where the hamfest was located, is just a magnificent facility. The Omni Center, across the street, is an architect's delight. Worth the trip, just to take in these two structures. However, the attendance seemed to be down a bit from the last time we were up there a few years ago. The wife and family really enjoyed the last show where they had a complete program for them, but felt they had been forgotten this time around. The orginal trip was memorable in the fact that I left them off to take in the bus tour of the area, or let the kids run loose in their activity room, while I got down to the serious fleamarket shopping. We could always meet in the hospitality room, of which there was none this time. Think the Atlanta group did a good job, but could use some improvements for the non-amateurs that attend.

An increase in the job work load prevented me from getting to do a column last month. It was all I could do get the KPC review finished. So we didn't get the chance to comment on the Gainesville Packetfest. Judging from the changes we have seen come across the screen, since that get-together, it had to have been a success. Considering this is the season for vacations, and the summer time blues, the Packetfest was a real shot in the arm to get things moving.

In the last few weeks, we have seen no less then three real WORLI BBS and one clone come up on 145.01. What a boost for the Tampa LAN, as Neil (WA3QFN) put the first BBS on line for this side of the state. Was it needed? Download the user log and see for yourself. In only a few weeks of operation, it's gotten quite a work out. The auto foward-ing to other RLI type boards is just super. We now have the means of messageing across the state, without having to go thru 4 or 5 digis. Also we are on the verge of total automatic handleing of NTS messages. In fact Gil, W4LLA in the Stuart LAN, checks K4NTA's BBS daily for any outgoing traffic to foward into the national traffic system. None of the FADCA BBS support the HF gateway operation at this time. This would be one more feature to add to a few of them. This would complete the link to the other active packet areas of the country. We could be in closer contact with our SOUTHNET neighbors in Atlanta, with the inclusion of a gateway. That is till we get the SOUTHNET linking together. To date we have been in contact with 11 RLI type BBSs from coast to coast on 20 meters. It really is neat to drop into other parts of the country and see what is going on. The subject of HF Packet is one that we will address in detail in a future column. That's it for this mouth. There is much more worthy to report but we need to get ready for vacation. A trip to Long Island is in the making, and of course packet will be along. Will comment on the activity from the Northeast next time.

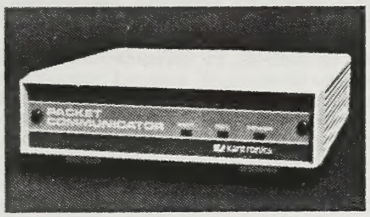
$49... Keith

THE CHOICE IS YOURS



Available: August (?)

- Unassembled Kit
- No Warranty
- Service Assistance (?)



Available: April, 1985
Dayton

Price: NOW $219.00

- Fully Assembled Unit
- Full One-Year Warranty
- Complete Service Facility & Staff

BUT LOOK BEFORE YOU LEAP

Both units are Packet Radio Terminal Node controllers with AX.25 protocol, a standard RS-232 compatible port, and command format software. But many differences exist too.

Buying the Kantronics Packet Communicator makes sense. You know our reputation for quality products and after-sales-support. You know the Kantronics tradition of making computer interfaces and software that work. So take your pick, the unassembled kit with no warranty, or the guaranteed Kantronics Packet Communicator, ready to work in your shack.

With a price of $219 we think the Kantronics Packet Communicator is more than a bargain, it's the smartest buy you'll make this year.

Kantronics
1202 E. 23rd Street (913) 842-7745
Lawrence, Kansas 66046

XEROX 820 NEWS

BRINGING UP THE STOCK 820 AS A MAILBOX

This month I decided to work on bringing up another Xerox 820 board from scratch. I purchased two more 820s for $59 that included everything except the 1771 and the ROMS. (Available from the Arnold Co. 214 Hill Ln. Red Oak. Texas 75154 214-576-2291.) Since I had these parts left over from the Emerald double density conversion it was a good deal for me.

The first problem that I needed to address was the problem of interfacing my Seimens 8 inch drives to the stock 820. If you are a regular reader of these columns in the BEACON then you will remember that in my article on the Emerald conversion I stated that I could not get the step time fast enough for the Seimens drives. Well....I found out that I was patching the wrong location. That is why 6mS worked after I got the Emerald up and running. So here is what you have to do to change the step time on the stock 820. After you apply power you will be greeted with the boot or typewriter options. Type MFF67 [cr] this will be greeted by FF67 02. You type 00 [cr] and this will change memory location FF67H to 00. The 02 is the value that gets written to the 1771 seek time register. The 02 means 10 mS. A 00 or 01 written to the seek time register will produce 6 mS step rates. Then you would type A to boot from disk A. The Seimens drives work very well after this simple patch is made. For a more permanent fix the monitor rom should be patched so that at power up when all the code is moved to high memory this location will be initialized properly.

The primary objective of all this was to get a WORLI type mailbox operational on an experimental basis here in the Clearwater/Tampa area. As many of you already know this objective was reached and the mailbox is up and running. Over the Fourth of July weekend both Ted (K4NTA) and myself got WORLI mailboxes working. We did not know at the time that each of us was working on them and we were both pleasantly surprised to be greeted by the "Hello, welcome to the XXX mailbox" when we connected to each other. Within a few days we had the mailboxes talking to each other. As of this date, Howie (N2WX) also has a new WORLI mailbox up and running and the autoforwards are set up so that they all talk to each other and to the existing Miami mailboxes. We have it set up like this. A message to Miami placed on my mailbox would be autoforwarded to N2WX-1 in Melbourne at 47 minutes past the hour between 10 PM and 7 AM. The message would then be forwarded at 30 minutes past the hour to K4NTA. Then at 13 minutes past the hour the K4NTA mailbox will pass all of its Miami/ Ft. Lauderdale messages to either K4TKU or NK4K in Miami.

This mailbox software could also be used by any packet operator for individual mailbox functions. The software can be configured so that any messages left on your mailbox will be automatically forwarded to the local LAN mailbox and only the messages for you will remain. It could also be real handy to leave a message for somebody when they check in or a disk file can also be left for somebody to download at their convenience. In fact some of the articles in this BEACON were left as messages for the editor to download at his convenience.

The mailbox also has a special message category for formal NTS style traffic. As you have probably noticed this autoforwarding is an excellent way to forward formal message traffic to those individuals with the necessary local or regional contacts to pass the traffic on. I'm sure that traditional methods of traffic handling are going to be joined very quickly by the packet store and forward systems.

If you would be interested in this software I'm sure any of the mailbox operators mentioned above would be glad to share a copy with you. Just leave a message for them on their mailbox to arrange the details! [ed note: See the SOUTHNET Coordinating Committee proposal on software distribution elsewhere in this issue.]

DRNET

C2976 CC10 J. Gordon Beattie Jr. (N2DSY,2990) 6/23/85 4:21 AM
KEYS:/ADDRESSING FORMAT FOR PBBS'S AND QSO'S/

I haven't gotten any response to the last comment I made in this conference. This is an important issue and warrants an exchange of ideas. I am concerned that the new addressing system used in the WORLI style PBBS's will again have table maintenence problems as the network grows. We abandoned direct user addressing because every PBBS had to know where to forward messages for every user in the network. The day will come when there will be too many PBBS's and we will need a better method of determining the path.

I suggested the format "W1XXX @ WORLI/03100603" as a means of solving the problem once and for all. The numeric field after "WORLI/" follows the proposed AX.121. The first digit signifies the network (0= Amateur, 1=Public Data Network, 8=Public Telex Network, 9=Public Telephone Network). The next four digits are the CCITT X.121 defined Data Network Identification Code for the United States (the fourth digit is "0" because it is the default network). The next three digit field is the "Area Code" for Massachusetts where WORLI is located. More digits could be provided if exchanges or regions within the Area Code were used to refine the address. A complete 10 digit code including Area Code, Exchange, and Subscriber could be provided if desired. This would allow a PBBS operator such as WORLI to have a packet access and a voice access number that could be remotely accessed via packet. For example: N2DSY in New Jersey tries to connect via packet to WORLI. N2DSY uses the address "03100603XXXNNNN" and gets a busy. So N2DSY tries to connect to WORLI's telephone port via packet. It would go as follows: N2DSY calls WORLI at address "93100603XXXNNNN". The network in WORLI's local area routes the call out to the telephone network using a gateway. Now we have bypassed the busy packet port and have been connected to the telephone port of the WORLI PBBS via a local telephone network gateway. If WORLI was accessible via Telenet the address would be "13110603ZZZZZZZZ" A gateway to Telenet would provide the needed connection and the traffic could be passed.

The point of all this is to show that we can benefit by using an easily determined address format. This kind of system would allow amateurs to provide the needed communications facilities in times of emergency. The same addressing would be used in message traffic and real-time QSO's.

Your comments please.

NON - ELECTRONIC MAIL

KANTRONICS
1202 E. 23rd Street (913)842-7745
Lawrence, Kansas 66044

7-1-85

To: Packet Clubs
Re: Kantronics Packet Communicator Price Change

Dear Club Members,

Kantronics has made a recent announcement concerning the Kantronics Packet Communicator. We ask your assistance in informing other amateurs who are interested in joining the packet revolution.

First, Kantronics has dropped the suggested retail price of the Packet communicator to $219.00. This is not a kit price, but rather a fully assembled and tested unit with a power supply and full one year warranty. This price change is effective immediately.

Second, this price change was brought about by competitive factors. Kantronics does not plan to discontinue the Packet Communicator, or make an effort to "dump" an old design before announcing a new unit. We have simply decided to lower the price in an effort to show how serious Kantronics is about packet communication.

Third, Kantronics will continue to guarantee all our products, and give service assistance via phone and letter. We are proud of the service reputation we have, and we plan to do our best to get and keep you on the air.

Please inform those who question the price change of these facts. Kantronics is always available to answer questions about our products and the way we do business.

Sincerely,
/s/
Mike Forsyth
Marketing Director

Now you can experience the best in error-free packet radio transmission with Heath's new HD-4040 Terminal Node Controller Kit

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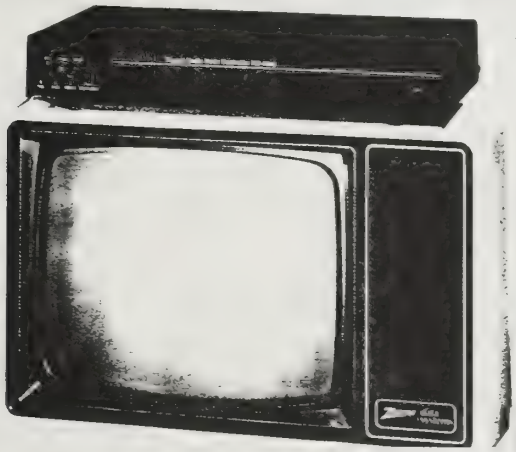

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SOUTHNET Coordinating Committee

SOUTHNET QUESTIONS AND ANSWERS

Gwyn Reedy, W1BEL

WHAT IS THE SOUTHNET COORDINATING COMMITTEE (SCC)?

At the SOUTHNET Packet Conference, members of FADCA, GRAPES and MARDA agreed to establish a committee for coordination of SOUTHNET matters. Since that time Alabama and South Carolina have nominated members. SOUTHNET is envisioned to cover North Carolina, Tennessee, and portions of Louisiana, as well as the states already involved. The exact borders of SOUTHNET are not a matter of great concern since close coordination will be required with neighboring areas in any case.

WHAT WILL THE SCC COORDINATE?

The kickoff meeting discussed the need for standard procedures for establishing linking, including frequency coordination, protocols, etc. There are many areas of user procedures and BBS operation that could benefit from the establishment of recommended procedures.

WHO IS ON THE COMMITTEE?

Alabama-K4HAL and W4HFU
Florida-N4ZQ and W1BEL
Georgia-WB4GQX and WD4LYV
Mississippi-K5OS and WA5DVV
South Carolina-W4FX and WA4SZK

WHAT WILL BE THE FIRST SCC PROJECT?

The old SOUTHNET map published in several previous issues of the BEACON is badly in need of updated information. SCC is going to establish a method for local members to provide regular inputs about stations on the air and digipeaters and BBSs in operation. The callsigns will be compiled for the SOUTHNET callbook. Volunteers are solicited.

.....

Ideas for SOUTHNET's Consideration

Wayne Harrell, WD4LYV

After attending the SOUTHNET Packet Conference, I have spent a lot of time thinking of ways to improve SOUTHNET. I am writing some of the ideas here because I believe these ideas deserve our attention before the network gets so large that we can't effectively take care of it.

1. Have someone in charge of WORLI MailBox coordination for all of SOUTHNET. This person would correspond with Hank (WORLI) for SOUTHNET and help take the load off him, so he can concentrate on programming. He would distribute updates to System Operators via a point of contact in each state or region. These points of contact would need to be knowledgeable MailBox operators themselves, and provide advice and assistance to other Sysops in their area.

2. Encourage every LAN to pursue operation on other than 145.01 until the linking function of that frequency is replaced by a 220 link. Early installation of a gateway will make this possible and will serve as part of the 220 linking equipment when that is ready for operation.

3. Get the local MailBox BBS off of 145.01 as soon as possible. Where network loading is a problem, discourage file transfers during the prime operating hours of 7 to 11 PM. Perhaps the Sysop could operate the MailBox BBS on a local LAN frequency during those hours, and on 145.01 at other times for forwarding of messages.

4. Encourage the larger LANs to have a direct link with neighboring large LANs to reduce loading on the networking link frequency. This will reduce the loading on 145.01 now and will stave off the overloading of the high speed network when it is built.

5. I recommend each store and forward system refrain from forwarding during prime hours. Each station should only forward to an easily reached nearby system with no more than 2 digipeaters enroute. Each system would have a forward file for all stations north and south of it, addressed only to the next system in the chain. These network message servers should not be accessed by local users if another local MailBox exists. These systems should not beacon.

6. Encourage all stations with HF packet capability to restrain themselves from tieing up the network servers. We need to establish a frequency for HF packet QSOs separate from the autoforward frequency.

7. Files of interest to all packet users need to be forwarded to all other MailBoxes. That will allow the files to transit the network once and be accessed locally, rather than cross the network for each local access.

8. MailBoxes and BBSs should not beacon through several digipeaters!

9. Is there interest in a large scale group purchase of Xerox 820 equipment? With the number of packeteers in our region, we ought to be able to get some great quantity discounts. Of course someone would have to agree to collect the money, place the order, and reship the parts...

10. Establish a BBS subcommittee of the SCC to recommend policy and procedures for SOUTHNET.

I am willing to act as clearinghouse for other ideas of the type presented here. Send to Wayne Harrell, WD4LYV, Rt. 1, Box 368, Sycamore, GA 31790. I will compare each submission with the list we have and add any new ones.

PACKET RADIO WITH THE TONO EXL-5000E COMMUNICATIONS TERMINAL

J. W. Gregory, W4QF

A completely stand alone VHF HF Packet, AMTOR, RTTY and CW terminal is accomplished by combining the Kantronics Packet TNC with the TONO EXL-5000E communications terminal.

1. Wire the RS-232 cable supplied with the Kantronics unit as follows: brown and white wires to individual RCA phono plug tips. Wire black wire and shield together and to the previously wired phono plug shields. The other wires are unused.

2. Connect brown wire phono plug to EXL-5000E "TTL" jack and white wire phono plug to "FSK" jack (on rear panel).

3. Very important: Carefully remove the front panel of the Kantronics unit and move the jumper from "RS232" to "TTL" (see manual).

4. Set all front panel buttons to OFF PeexceptPe push in "TTL-IN" and "ASCII". Turn EXL 5000E on. Set speed to 300.

5. Turn packet TNC on and, following Kantronics manual instructions, hit 'SHIFT 0' and packet TNC will identify.

6. Very important Use "CTRL" and "M" at the same time to generate the "CR" main control signal required by the packet TNC. Do not use the CR LF (crooked arrow) on the EXL 5000E keyboard as the control.

7. Change Kantronics TNC "ECHO" to "OFF". Follow the instruction manual.

8. All other commands are standard and correct from the keyboard

9. Follow packet TNC manual instructions for all interconnections, etc.

Thats all there is to it!

.....

...NEWS...

Please fill out the questionaire with your name and other requested information, fold it so the addresses are positioned for mailing, add 22 cents postage, and mail.

Digital Radio Net (DRNET) is an electronic mail system hosted on the NJ Institute of Technology Electronic Information Exchange System (EIES). DRNET has made possible the timely publication of packet news in the BEACON and the TAPR PSR, and has played a very important role in development of the TNC2 and 9600 linking equipment. Your effort to send in this questionaire can help to keep this system available for the development of packet radio.

.....

M 1395 Thomas A. Moulton (W2VY,995) 7/ 9/85 8:31 AM L:25
(ORIG.) 7/ 9/85 8:09 AM L:15
KEYS:/SEND TO ALL PARTS OF THE WORLD/PAPER REPLIES PLEASE/
TO: (Group 95)

****

ATTENTION:

****

In an effort to discover how much of the material from EIES (DRNET) gets copied to BBS and other distribution methods, I am requesting the following information from EVERY STATION WHO READS THIS MESSAGE:

Call, Name, QTH, Packet Gear, Class

How you got This message, how often you get EIES (DRNET) messages

Name of your local packet group, and number of members

****

I would also like to see the final message if you can print it.

Why do I want all this? I would like to flood my mailbox with mail and then take the stack and be able to say, "See these 5000 letters they came from the 30 DRNET accounts!"

I also want to see how well messages get distributed.

My address is:
CCCC @ NJIT
Tom Moulton, W2VY
323 King Blvd
Newark, NJ 07102

****

NAME:_____ CALLSIGN:_____

ADDRESS:_____LICENSE CLASS:_____

CITY, STATE, ZIP:_____

This message was obtained through DRNET (Acct 2975) and the FADCA>BEACON newsletter. Circulation approximately 500 copies monthly. The BEACON contains a substantial amount of DRNET information every month.

OTHER PACKET GROUPS I ALSO BELONG TO:_____

22¢

FADCA, Inc.
812 Childers Loop
Brandon, FL 33511

CCCC @ NJIT
Tom Moulton, W2VY
323 King Blvd
Newark, NJ 07102

CANDIDATES FOR FADCA DIRECTORSHIP

Kenneth Block, WD4KSO

If elected as a Board Member I shall continue my support of FADCA with vigor and enthusiasm in any role the officers see fit. My background includes administration both in business and amateur radio affairs. I was among those who conceived and facilitated the start of the Palm Beach Amateur Radio Council and served them as a Director and Vice President. I am also a past president of the Palm Beach Repeater Association. Packet Radio is not in its infancy. I would like to help guide its future.

Bill Bosley, K3NN

I feel I can make a real contribution as a FADCA Director by representing the interests and airing the opinions of packeteers in the Panhandle area. I have lots of ham radio experience, having been active continuously since 1954. I have a degree in Electrical Engineering and have experimented extensively with antennas, circuit design and microcomputers and although only a beginner, I have an intense interest in Packet Radio. I am a mid-level manager for an Air Force flying unit which gives me the background to understand and deal with organizational bureaucracy. All this means that I'll be gald to take time out from playing with packet to participate in the nuts and bolts running of FADCA.

Jack Brindle, WA4FIB

First licensed in 1970, I have been active in packet radio since the spring of 1982 when K4GFG and I began work on the Ft. Lauderdale (FLAPR) packet system. I am currently involved in developing packet systems for the Apple Macintosh computer. My background includes degrees in both Electrical Engineering and Computer Science. My work experience has included a short stay in the ARRL Technical Department. I am presently a senior engineer for Paradyne in Largo, in the network systems group. I have been a FADCA member for almost two years, and am currently involved in the high speed linking efforts for network node digital hardware and software design. I believe the future should see FADCA leading the way in packet networking at all levels.

Jim Diggs, K4AHO

I have been involved in digital amateur communications for a long period of time, first RTTY, then AMTOR, and packet. I have been participating in FADCA since it was formed and have been the principal representative of the Orlando area. I helped organize the Central Florida Packet Association which is a local group affiliated with FADCA. I organized the FADCA booth and seminars at the 1985 Orlando Hamcation, both of which were well received. I have donated time and equipment to the Lake Wales digipeater, and authored the JPAC terminal program for the C-64 on packet. I would like to continue to provide leadership to FADCA through the Board of Direrctors position.

Andy DiMartini, KC2FF

I was first licensed in 1965 as WN2VUJ in New Jersey. I was active in the local Civil Defense RACES organization and a regular member of the NJ Traffic Net. I was also active in Army MARS and was trained in RTTY techniques. In College I was an officer of the campus radio club and was active in two meter autostart RTTY, 10 meter FM, SSB DX and Field Day activities. While in the Air Force I helped expand the single FM repeater in Rapid City, SD to a three site network, and obtained my advanced class license. Back in NJ, I put op the first 10 meter repeater in the northern part of the state, a split site setup linked on 450 over a 5 mile path. Was a founding member of the Metroplex ARA. Put up a wide-area two meter voice repeater, cross-linked to the 10 meter repeater and a 450 repeater. This installation was used to contact stations on three continents. The club has grown to over 1000 members today. I have been involved in packet since early 1984 and have built and installed the KC2FF-7 wide-area digipeater in Clearwater. I am currently working on equipment for implementing the GATOR-1 linking scheme. I feel I can be of service to the FADCA Board on technical matters as well as bringing my organizational experience and packet enthusiasm.

Joe DiPietro, WA4NWO

I have been a licensed amateur and professional electronics technician since 1975. My main interest since then has been experimentation on the higher frequencies, incliding the construction of 1300 MHz repeaters and 10 GHz beacons. My involvement in packet radio began in August 1984 at the Jacksonville Hamfest. Since then I have constructed three TNCs and a wide area digipeater, as well as organizing our local packet club. Presently I am an Electrical Engineering student at the University of Florida, and President of both the Gator Amateur Radio Club and the Gainesville Amateur Packet Radio Association. Packet radio is clearly the key to future growth in ham radio. I believe my experience would be a major asset to FADCA and therefore would be willing to serve as a member of the Board of Directors.

Howard Goldstein, N2WX

Growth, public service, and technology. If FADCA is prepared do deal with these issues, the rest will fall into place. As a director I will support, at every board meeting: A stronger voice for packet in the amateur community as a whole. One thing this means is recognition of the need for more spectrum through assignment by coordinating bodies. Frequencies are the tools to ply the packet waters with - and without them, there is no place for growth, no paths for public service acts, and no bandspace to utilize any new technology with. As a person I've devoted almost two years of work to the growth of packet in Florida, and in the country. TAPRs recently announced TNC 2 represents a year of software effort on my part to help build packet activity by providing a TNC with unmatched features at a reasonable price. As your to expend some of these efforts to the benefit of FADCA, and in a much more direct way. Besides experience as a ham (N2WX since 1977, licensed since '76), I'm currently an upperclassman business major at Florida Institute of Technology. Moreover, I bring almost five years of real world small business experience with me. I hope to receive your vote.

Continued on next page

Ted Huf, K4NTA

I have been on packet radio since the Spring of 1983 when I was the TAPR TNC Beta test coordinator for the Stuart, Florida area. In the Summer of 1983 I built Florida's first wide area digipeater, K4NTA-1. and Florida's first Packet Radio BBS system. I was cofounder of FADCA with Gwyn Reedy, W1BEL and currently serve as Vice President of FADCA. I am coordinator of GATOR 1 and the designer of the addressing scheme. From March to July 1984 I was editor of the FADCA>BEACON Newsletter. I am also working with Howie Goldstein, N2WX as a beta tester of the the TNC-2 software. I hold an Advanced class ham license and have been licensed since 1961. I am Director of Engineering for Perry Cable TV Corp a CATV company with systems in St. Lucie, Martin and Plam Beach counties.

Dick Klein, W4PCM

Amateur radio gave me a start in electronics which eventually ended up as degrees in Physics and Electronic Engineering. Now I have a law practice in Jacksonville specializing in business and finance. Since my affiliation with FADCA, I've helped stimulate packet activity in the Jacksonville area, organized packet radio events at the Jacksonville Hamfests, prepared and filed the Articles of Incorporation and By-Laws for FADCA, and serve as a volunteer legal adviser. As director, I plan to continue these type of activities.

Jon Knapp, WD4KSN

My special interests in radio are emergency communications, computers and VHF DX. My most memorable DX two-way contact was W5LFL on STS-8. I was active in the formation of the Palm Beach Amateur Radio Council and look forward to seeing packet radio included in emergency plans. Currently I am operating a business that installs satellite dishes, TV antennas and two-way radios. If elected to the Board, my efforts will be focused in the areas of organization, emergency and public service applications of packet radio.

Gwyn Reedy, W1BEL

I have been licensed since 1954 and hold an extra class license. I became interested in packet radio in early 1981 and obtained my first Vancouver TNC board that year. When I arrived in Florida in late 1982, I organized the Tampa area Beta test site for the TAPR TNC. That small organization and K4NTA's similar group formed the basis for the formation of FADCA in December 1983. I have traveled the State of Florida giving demonstrations and talks about packet radio, and have represented FADCA at numerous national conferences. I have been serving as President of FADCA and editor of the BEACON since their inception, with the kind help of K4NTA when I was out of country for 4 months in 1984. I instigated and helped organize the first SOUTHNET Packetfest and the formation of the SOUTHNET Coordinating Committee. I wish to continue to provide leadership to FADCA and help us grow beyond our present 250 members by providing packet leadership for Florida, the Southeast, and the entire packet radio community.

Bill Sams, KF4LG

A Cub Scout trip in the fourth grade in 1952 started me into the world of amateur radio. I was mainly interested in HF DX before being introduced to packet radio. W1BEL convinced me to join the TAPR Beta test and I have so enjoyed the marriage of computers to radio that my HF station is greatly neglected. I have assisted Gwyn with local demonstrations and have served as interim director through the organizational phase of FADCA> I have an Electrical Engineering degree and am Manager, T and D operations for Tampa Electric Company where I am involved in the construction and maintenance of high voltage transmission lines. I would like to serve FADCA and my fellow packeteers in helping shape and guide the future of our hobby and organization. I believe FADCA will continue to be a major force in the development of packet radio, and that its leadership is important.

Bill Whitaker, WD4JKM

I was first licensed in 1977 and hold a General Class License. I am a Native Floridian, currently serving as Vice President of Dade Radio Club (Miami), and Member of the 1986 Tropical Hamboree (Miami hamfest) Committee. I formerly served as Treasurer of Dade Radio Club (6 consecutive terms), Member of South Florida FM Association, Net Manager of Dade Emergency Net (2 consecutive terms), Member Dade County ARPSC Planning Committee. My exposure to digital communication modes began in 1977 with RTTY and lead to the establishment of a local 2-meter RTTY simplex frequency for use during communication emerencies in the county-wide emergency support plan. I have provided many manhours of volunteer communications work with various community events such as the Orange Bowl Parade/Marathon, March of Dimes Superwalk, and Dade County Youth Fair. I have worked with many Amateur groups promoting packet radio through video tape programs and demonstrations even before becoming active in the mode. This interest was sparked by the efforts of FADCA members who accepted my invitation to the 1984 Tropical Hamboree and started a wildfire of interest in South Florida. Dade Radio Club has emerged as the driving force behind packet activity in South Florida with W4NVU-1 digipeater on line, and funds allocated for GATOR-1 linkng. I look forward to your support as director and toward coming year of advancement of Packet Radio in Florida.

IF YOU ARE A FADCA MEMBER, A PRE-ADDRESSED BALLOT IS INCLUDED IN WITH THIS ISSUE OF THE BEACON. PLEASE MAKE YOUR SELECTION AND RETURN THE BALLOT PROMPTLY. YOU MAY WRITE IN THE NAME OF ANYONE THAT YOU CARE TO VOTE FOR. FADCA BY-LAWS REQUIRE DIRECTORS TO BE RESIDENTS OF FLORIDA.

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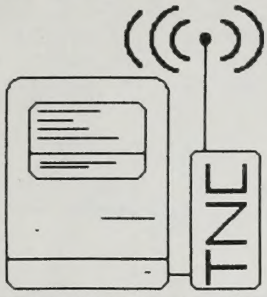

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FADCA>BEACON

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FADCA is a non-profit Florida corporation devoted to research, development, education, and public service. FADCA is governed by a board of directors and administered by officials appointed by the directors. The directors are:

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Advertising space is available in the FADCA>BEACON according to the following rate schedule. There will be an additional charge of $10.00 for set up of non-camera ready copy.

Full page	$30.00	Discounts for multiple issue contracts.
Half page	$17.00	
Quarter page	$10.00	
Eighth page	$ 6.00	

Small classified advertisements for FADCA members will be without charge.

Rates are based on a guaranteed monthly circulation of 250 copies, however that amount is normally doubled by introductory mailings and distribution at hamfests and demonstrations. BEACON readers are dedicated, enthusiastic experimenters and builders comprising a specialized, trend-setting market.

Copies printed:

January 1985	- 550	May 1985	- 500
February 1985	- 540	June 1985	- 500
March 1985	-1000	July 1985	- 600
April 1985	- 500		

Volume one (1984) back issues of the FADCA>BEACON are available for reproduction and mailing costs of $.75 per issue, or $5.00 for the entire year (11 issues). Send your request to the FADCA address.

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The deadline for inputs for the AUGUST issue of the FADCA > BEACON is AUGUST 10th. Articles should be in final form using a 35 character column width.

THE FLORIDA AMATEUR DIGITAL COMMUNICATIONS ASSOCIATION NEWSLETTER

Florida Amateur Digital
Communications Association, Inc.
812 Childers Loop
Brandon, FL 33511

W3OTC Comp
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